IN THE CLAIMS

Please amend the claims as follows:

Claims 1-3 (Cancelled).

Claim 4 (Withdrawn): A method of manufacturing an ultrasonic probe, comprising:

a first step of forming a resin layer on at least one of upper and lower surfaces of a single-crystal piezoelectric members, the resin layer having smaller acoustic impedance than the single-crystal piezoelectric member;

a second step of cutting the single-crystal piezoelectric member and the resin layer, thereby to form a plurality of kerfs; and

a third step of filling the plurality of kerfs with resins.

Claim 5 (Withdrawn): The method according to claim 4, wherein the plurality of kerfs are formed like a grid in the second step.

Claim 6 (Withdrawn): The method according to claim 4, further comprising a fourth step of polishing the resin layer to remove the resin layer.

Claim 7 (Withdrawn): A method of manufacturing an ultrasonic probe, comprising:

a first step of adhering a plurality of single-crystal piezoelectric members to a resin sheet;

a second step of cutting the piezoelectric single-crystal members and the resin sheet, thereby to form a plurality of kerfs; and

a third step of filling the plurality of kerfs with resins.

Claim 8 (Currently Amended): An ultrasonic probe comprising:

a plurality of piezoelectric members formed of solution-based single-crystal containing at least plumbum titanate, and arranged like an array;

a plurality of first ~~electrode~~ electrodes formed on [[a]] lower ~~surface~~ surfaces of ~~each of~~ the piezoelectric members, the lower surface being an opposite side of an acoustically emitting side;

~~a backing member which supports the plurality of piezoelectric members;~~ and

a first flexible printed wiring board ~~which is arranged between the first electrode and the backing member, includes~~ having a plurality of ~~first~~ pattern wires ~~each~~ having a width smaller than a width of each of the piezoelectric ~~member~~ members in an array direction ~~a longitudinal direction of the ultrasonic probe~~, extending in a longitudinal direction of each of the piezoelectric members, and ~~connected to the first electrode along the longitudinal direction of each of the piezoelectric members, and connects the plurality of pattern wires~~ configured to lead and connect the first electrodes to an ultrasonic diagnosis apparatus body.

Claim 9 (Currently Amended): The ultrasonic probe according to claim 8, further comprising:

a plurality of second ~~electrode~~ electrodes formed on ~~an~~ upper ~~surface~~ surfaces of ~~each of~~ the piezoelectric members~~, the upper surface being the acoustically emitting side~~; and

a second flexible printed wiring board including a plurality of second pattern wires ~~each~~ having a width smaller than a width of each of the piezoelectric ~~member~~ members in ~~the longitudinal~~ an array direction ~~of the ultrasonic probe~~, and ~~connecting the plurality of second pattern wires~~ configured to lead and connect the second electrode to ground.

Claim 10 (Withdrawn): A method of manufacturing an ultrasonic probe, comprising:

a first step of adhering a flexible printed wiring board and a single-crystal piezoelectric member to each other, the flexible printed wiring board having conductive layers each having a predetermined width, which are patterned in parallel on a resin member; and

a second step cutting the flexible panted wring board and the single-crystal piezoelectric member together, along and between the conductive layers, thereby to form a piezoelectric vibration element array having a width smaller than a width of each of the conductive layers.

Claim 11 (Currently Amended): An ultrasonic probe comprising:

a plurality of piezoelectric members formed of solution-based single-crystal comprising at least plumbum titanate, and arranged like an array;

a plurality of first ~~electrode~~ electrodes formed on [[a]] lower ~~surface~~ surfaces of ~~each of~~ the piezoelectric members~~, the lower surface being an opposite side of an acoustically emitting side~~;

~~a backing member which supports the plurality of piezoelectric members;~~

a first flexible printed wiring board ~~which is arranged between the first electrode and the backing member, includes~~ having a plurality of ~~first~~ pattern wires ~~each~~ having a width smaller than a width of each of the piezoelectric ~~member~~ members in an array direction ~~a longitudinal direction of the ultrasonic probe~~, extending in a longitudinal direction of each of the piezoelectric members, and ~~connected to the first electrode along the longitudinal direction of each of the piezoelectric members, and connects the plurality of first pattern wires~~ configured to lead and connect the first electrodes to an ultrasonic diagnosis apparatus body;

a plurality of second ~~electrode~~ electrodes formed on ~~an~~ upper ~~surface~~ surfaces of ~~each of~~ the piezoelectric members~~, the upper surface being the acoustically emitting side~~; and

a second flexible printed wiring board including a plurality of second pattern wires ~~each~~ having a width smaller than a width of each of the piezoelectric ~~member~~ members in ~~a longitudinal~~ an array direction, leading and connecting the electric wires ~~of the ultrasonic probe and which connecting a plurality of the second pattern wires~~ to ground.

Claim 12 (Currently Amended): An ultrasonic probe comprising:

a plurality of single-crystal piezoelectric members;

a plurality of lower resin layers ~~each of~~ which ~~is~~ are formed on ~~a~~ lower ~~surface~~ surfaces of the piezoelectric members and ~~each of~~ which ~~has~~ have smaller acoustic impedance than the piezoelectric members, a cutting characteristic and electrical conductivity so as to function as ~~an electrode~~ electrodes, an acoustic impedance of 2×10^6 g/m^2 to 10×10^6 g/m^2 so as to function as ~~an~~ acoustic matching ~~layer~~ layers, the lower ~~surface~~ surfaces being an opposite side of an acoustically emitting side; and

~~a backing member which supports the single-crystal piezoelectric members~~

a first flexible printed wiring board having a plurality of pattern wires having a width smaller than a width of each of the piezoelectric members in an array direction, extending in a longitudinal direction of each of the piezoelectric members, and configured to lead and connect the first electrodes to an ultrasonic diagnosis apparatus body.

Claim 13 (Currently Amended): An ultrasonic probe comprising:

a plurality of 1-3 or 2-2 type composite piezoelectric members formed of solution-based single-crystal comprising at least plumbum titanate,

a plurality of lower resin layers ~~each of~~ which ~~is~~ are formed on [[a]] lower ~~surface~~ surfaces of the piezoelectric members and ~~each of~~ which ~~has~~ have smaller acoustic impedance than the piezoelectric members, a cutting characteristic and electrical conductivity so as to function as ~~an electrode~~ electrodes, an acoustic impedance of 2×10^6 g/m^2 to 10×10^6 g/m^2 so as to function as ~~an~~ acoustic matching layers ~~layer~~; and

~~a backing member which supports the single-crystal piezoelectric members~~

a first flexible printed wiring board having a plurality of pattern wires having a width smaller than a width of each of the piezoelectric members in an array direction, extending in a longitudinal direction of each of the piezoelectric members, and configured to lead and connect the first electrodes to an ultrasonic diagnosis apparatus body.

Claim 14 (Currently Amended): The ultrasonic probe according to claim 11, wherein ~~each of~~ the plurality of first pattern wires included in the second flexible printed wiring board ~~extends~~ extend along an entire length of each of the piezoelectric members ~~member~~.

Claim 15 (Previously Presented): The ultrasonic probe according to claim 8, further comprising an upper resin layer which is formed on an upper surface of the piezoelectric member, the upper surface being the acoustically emitting side, and which has smaller acoustic impedance than the piezoelectric member, and a cutting characteristic and electrical conductivity so as to function as an electrode.

Claim 16 (Cancelled).

Claim 17 (Previously Presented): The ultrasonic probe according to claim 12, further comprising an upper resin layer which is formed on an upper surface of the piezoelectric member, the upper surface being the acoustically emitting side, and which has smaller acoustic impedance than the piezoelectric member, a cutting characteristic and electrical conductivity so as to function as an electrode, an acoustic impedance of 2×10^6 g/m^2 to 10×10^6 g/m^2 and functions as an acoustic matching layer.

Claim 18 (Cancelled).

Claim 19 (Currently Amended): An ultrasonic probe comprising:

a plurality of single-crystal piezoelectric members,

a plurality of lower resin layers ~~each of~~ which ~~is~~ are formed on [[a]] lower ~~surface~~ surfaces of the piezoelectric members and ~~each of~~ which ~~has~~ have smaller acoustic impedance than the piezoelectric members, a cutting characteristic and electrical conductivity so as to function as ~~an electrode~~ electrodes, the lower ~~surface~~ surfaces being an opposite side of an acoustically emitting side; and

a plurality of wires ~~each of~~ which ~~is~~ are arranged on ~~each of~~ the lower resin layers, ~~extends~~ extend along an entire length of each of the piezoelectric members and ~~is~~ are connected to ~~each of~~ the lower resin layers along the longitudinal direction of each of the piezoelectric members.

Claim 20 (Currently Amended): An ultrasonic probe comprising:

a plurality of 1-3 or 2-2 type composite piezoelectric members formed of solution-based single-crystal containing at least plumbum titanate;

a plurality of lower resin layers ~~each of~~ which ~~is~~ are formed on [[a]] lower ~~surface~~ surfaces of ~~each of~~ the piezoelectric members and ~~each of~~ which ~~has~~ have smaller acoustic impedance than the piezoelectric members, a cutting characteristic and an electrical conductivity so as to function as ~~an electrode~~ electrodes, the lower ~~surface~~ surfaces being an opposite side of an acoustically emitting side; and

a plurality of wires ~~each of~~ which ~~is~~ are arranged on ~~each of~~ the lower resin layers, ~~extends~~ extend along an entire length of each of the piezoelectric members and [[is]] are connected to ~~each of~~ the lower resin layers along the longitudinal direction of each of the piezoelectric members.